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Morality and the Evolution of Christianity

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PART II: MORALITY AND EARLY CHRISTIANITY

1. Morality and the Evolution of Christianity²⁶⁷

Petri Luomanen

1. Introduction

Some evolutionary theorists and cognitive scientists, like Richard Dawkins and Pascal Boyer, take religion as a spandrel, a by-product of mental modules that originally supported the evolutionary adaptation of our hunter-gatherer ancestors to some natural surroundings. These mental structures include modules like agent detector, cheater detector and various alarm systems that in addition to (or instead of) their original functions work like “gadgets” (Boyer’s term) that produce religion.²⁶⁸ In its extreme form the by-product theory sees religion as a harmful virus (or meme), effective in copying itself and spreading in culture. Its effect on morality is disastrous: it is a major source of conflict and evil.²⁶⁹

On the other hand, there are evolutionary biologists who think that religion is itself an adaptation. David Sloan Wilson, for instance, argues in contrast to the by-product theory that religions survive because of their own ability to enhance in-group morality and

²⁶⁷ The article is shortened and modified version of “From Mark and Q to Matthew: An Experiment in Evolutionary Analysis.” Pages 27–73 in *Mark and Matthew II*. Edited by E.-M. Becker and A. Runesson. Wissenschaftliche Untersuchungen zum Neuen Testament 304. Tübingen: Mohr Siebeck, 2013.

²⁶⁸ Pascal Boyer, *Religion Explained: The Human Instincts that Fashion Gods, Spirits and Ancestors* (London: Vintage, 2002), 150–54.

²⁶⁹ Cf. Pascal Boyer, *The Naturalness of Religious Ideas: A Cognitive Theory of Religion* (Berkeley: University of California Press, 1994); and Richard Dawkins, *The God Delusion* (London: Bantam Press, 2006).

cohesion. This gives religious groups an adaptive advantage over other groups in evolution—purely in material terms.²⁷⁰

Throughout the history of the critical study of biblical traditions, scholars have also presented overall interpretations of the development of Christianity. One of the best known examples must be Ferdinand Christian Baur's Hegelian interpretation of the birth of Christianity as the result of the two opposing theses of strict Jewish Christianity and more liberal Pauline Christianity, resulting in the synthesis of Catholic Christianity.²⁷¹

What have been largely missing are approaches that tie the analysis with the discussion about the significance of biological evolution for cultural studies or with the discussion about the coevolution of nature and culture. Now there is growing interest in this kind of approach, especially in the context of interdisciplinary analyses of the beginnings of Christianity. Morality plays a central role in the discussion because scholars who argue for Christianity's adaptive evolutionary function think that Christianity was

²⁷⁰ David Sloan Wilson, *Darwin's Cathedral: Evolution, Religion and the Nature of Society* (Chicago: The University of Chicago Press, 2002), 44. Daniel Dennett locates his position somewhere between Wilson and Dawkins, criticizing Wilson's group selection model, which, by definition, does not cohere with Dennett's own "meme's eye" perspective. On the other hand, Dennett regards his meme-theorizing as more friendly towards religion than that of Richard Dawkins. See Daniel Dennett, *Breaking the Spell: Religion as a Natural Phenomenon* (London: Penguin Books, 2006), 181–88. For an assessment (and critique) of Dawkins and Dennett, see Armin Geertz, "New Atheistic Approaches in the Cognitive Science of Religion: On Daniel Dennett, *Breaking the Spell* (2006) and Richard Dawkins, *The God Delusion* (2006)," in *Contemporary Theories of Religion*, ed. M. Strausberg (Oxon: Routledge, 2009), 242–63.

²⁷¹ Baur, Ferdinand Christian, "Die Christuspartei in der korinthischen Gemeinde, der Gegensatz des petrinischen und paulinschen Christentums in der ältesten Kirche, der Apostel Petrus in Rom," *Tübinger Zeitschrift für Theologie* (1831) 61–206. Reprinted in *Ausgewählte Werke in Einzelausgaben*, Vol. 1, ed. Klaus Scholder (Stuttgart: F. Frommann), 1–146.

adaptive because of its moral qualities, ability to enhance altruism and care for dispossessed. Nevertheless—as the following summary of previous analyses shows—discussion has remained highly abstract, suggesting more than providing critical evidence. As far as there have been more concrete claims concerning specific social processes that would explain the evolution of Christianity, these have been presented by scholars from outside the field of biblical studies. These are important and welcome contributions to interdisciplinary discussion but they also require more detailed assessment in the light of available sources.

This article does not attempt to solve the overall problem of the birth of religion or the question of why religions in general could be adaptive. Instead, I will be focusing on early Christianity (and partly its predecessor Judaism). Even within this sphere of religious thinking and practice, my scope is limited because I am developing and testing a model that would enable us to trace something of a cultural-evolutionary history of early Christian writings and communities where these writings were produced and used. Thus, I am taking the early Christian writings to be analyzed in this chapter as literary expressions of religious ideas and forms of communal life.

In the following, I first introduce and assess some of the key interdisciplinary evolutionary approaches to early Christianity (Section 2). This leads to the formulation of a general model for an evolutionary analysis and comparison of early Christian gospels (Section 3) followed by an example (Section 4) and conclusions (Section 5).

The example deals with the Gospel of Matthew, the Gospel of Mark, and the sayings gospel Q.²⁷² Because Q has not survived as a full document—but has to be reconstructed on the basis of Matthew's, Mark's and Luke's gospels—it is possible to regard Q as a document that was not selected as such in the cultural evolution of early Christianity. The comparison of Q with the Gospel of Matthew is also highly relevant for the discussion of the development of Christian morality because Matthew's Sermon on the Mount was in its incipient form already in Q. Although often regarded as a crystallization of Jesus' genuine

²⁷² Q, from the German word *Quelle*, is generally regarded as a common source for the Matthew and Luke gospels. It has not survived but it can be reconstructed on the basis of Matthew and Luke.

teaching, the Sermon on the Mount as we now have it in the Gospel of Matthew is a composition that derives from the editor of the Gospel of Matthew. Why did the Sermon survive in its Matthean form and not in its earlier Q form?

My own interest in this topic is rooted in a larger project which aims at developing an overall socio-cognitive approach to the spread of early Christianity in which I draw on the social-scientific criticism of biblical traditions, especially the social identity approach,²⁷³ and the cognitive science of religion.²⁷⁴ These methodological interests also characterize the evolutionary model to be developed below.

2. Evolutionary accounts of early Christianity

2.1. Background

Many of the recent evolutionary approaches to the birth of Christianity—especially those falling outside early Christian studies—are characterized by the use of Rodney Stark's

²⁷³ Following Dominic Abrams and Michael A. Hogg, "An Introduction to the Social Identity Theory," in *Social Identity Theory: Constructive and Critical Advances*, ed. D. Abrams and M. A. Hogg (New York: Harvester Wheatsheaf, 1990), 1–9, I am using the term *social identity approach* as an umbrella term that encompasses both *social identity theory*, originally developed by Henry Tajfel and John Turner, and the more specific *self-categorization theory* developed later by Turner and his colleagues. Both are closely related social-psychological theories. Their main difference is that social identity theory is more concerned with group phenomena while self-categorization theory pays more attention to the cognition of individuals who categorize themselves and their in-groups in relation to others.

²⁷⁴ For an introduction on how to combine these approaches, see Petri Luomanen, Ilkka Pyysiäinen, and Risto Uro, ed., *Explaining Christian Origins and Early Judaism: Contributions from Cognitive and Social Science*, Biblical Interpretation Series 89 (Leiden: E. J. Brill, 2007).

sociological analysis of the reasons for the rise of Christianity. For instance, David Sloan Wilson, who is an evolutionary biologist, presents in his *Darwin's Cathedral: Evolution, Religion, and the Nature of Society* (2002) an adaptationist program for the study of culture and religion, including examples from Judaism and early Christianity. Wilson argues for his program in discussion with Stark, criticizing Stark's *Theory of Religion* (1987; coauthored with William Sims Bainbridge) and hailing Stark's *The Rise of Christianity* (1996). Likewise, W. D. Runciman, a British representative of historical sociology, has also drawn on Stark in his article "The Diffusion of Christianity in the Third Century AD as a Case-Study in the Theory of Cultural Selection" (2004). Similarly, Peter Richerson and Robert Boyd refer to Stark's analysis when discussing the role of religion in group selection in their *Not by Genes Alone: How Culture Transformed Human Evolution* (2006).²⁷⁵

Presumably, one of the reasons for the use of Stark by these evolutionary theorists is that Stark's understanding of the reasons for the rise of Christianity—if viewed from the viewpoint of evolution—seems to present a clear case of group selection. Stark seeks to show how Christianity spread through open networks and by improving the quality of life of those who joined Christian communities. Christian groups survived better in times of famine and plague and therefore their relative percentage of the population increased.²⁷⁶

An interesting feature in this positive reception of Stark among evolutionary theorists is that the frameworks from which the evolutionary theorists view Stark's research data

²⁷⁵ Rodney Stark and William S. Bainbridge, *A Theory of Religion*, Toronto Studies in Religion 2 (New York: P. Lang, 1987); Rodney Stark, *The Rise of Christianity: A Sociologist Reconsiders History* (Princeton: Princeton University Press, 1996); Peter J. Richerson and Robert Boyd, *Not by Genes Alone: How Culture Transformed Human Evolution* (Chicago: The University of Chicago Press, 2006), 162–63, 210–11, 273 n. 29 (Richerson and Boyd also refer to David Sloan Wilson); Wilson, *Darwin's Cathedral: Evolution, Religion and the Nature of Society*; W. G. Runciman, "The Diffusion of Christianity in the Third Century AD as a Case-Study in the Theory of Cultural Selection," *European Journal of Sociology* 45(1) (2004): 3–21.

²⁷⁶ See, for instance, Stark, *The Rise of Christianity*, 73–94, 95–120, 147–62.

differs quite clearly from Stark's own perspective. Stark himself is a supporter of Intelligent Design.²⁷⁷ He thinks it is possible to apply the evolutionary viewpoint of variation and selection of the fittest in the study of cultural "evolution" but that happens only "within the 'species' known as human cultures or, ... within the 'species' called religion."²⁷⁸ It is clear that this kind of evolutionary analysis is quite restricted as compared with Darwinian evolutionary analysis which allows reasoning across species. Nevertheless, these discrepancies notwithstanding, I agree with the aforementioned evolutionary theorists

²⁷⁷ Rodney Stark, *Discovering God: The Origins of the Great Religions and the Evolution of Belief* (New York: HarperCollins, 2007), 395–99. In his most recent publications Stark has clearly lost touch with appropriate academic discussion. He often ridicules his opponents energetically instead of focusing on presenting proper arguments. One example of this is the way he treats Boyer, Dawkins and Dennett in Stark, *Discovering God*, 40–42.

²⁷⁸ *Ibid.*, 8–9. In the present context, it is not possible to go into the details of Stark's understanding of religion, nature and science. In short, the cornerstones of his view seem to be: (1) The world was created by Intelligent Designer (*ibid.*, 395–99). Thus (2) both nature and human social life are governed by natural and social laws (Stark, *The Rise of Christianity*, 23, 26; Stark, *Discovering God*, 398–99). (3) Revelation is guided by divine accommodation, which means that humans, according to their growing capacities of understanding, get more information about and from God (*ibid.*, 5–8). (4) Religions are doctrinally driven (although people do not join religious movements on the basis of doctrine but through their social networks); doctrines create the forms of life, and great leaps in the development are instigated by religious geniuses who invent the new ideas (alternatively, "God reveals them"; *ibid.*, 43–46). Therefore, (5) theology involves formal reasoning about God, and science is also theology (*ibid.*, 5, 399). This is also (6) the reason for the rise of science and western success; it was made possible by Jewish-Christian understanding of the one and the reasonable Intelligent Designer (Rodney Stark, *The Victory of Reason: How Christianity Led to Freedom, Capitalism, and Western Success* (New York: Random House, 2005). Consequently, (7) rational choice / exchange theory is well suited for analyzing culture and religion.

that it is possible to apply Stark's research data in a broader Darwinian cultural analysis of the evolution of early Christianity.

In another context, I have assessed Rodney Stark's sociology of early Christianity in detail,²⁷⁹ showing the weak points of his approach, which relies too heavily on social laws and is therefore susceptible to anachronisms. Space does not allow a repetition of the discussion here, but I agree with Stark that open networks were necessary for the spread of Christianity and I have adopted that viewpoint as a part of the model applied in this article. W. D. Runciman's analysis of Christianity in the framework of cultural evolution draws largely on Stark but makes some important qualifications, especially concerning strategies towards insiders and outsiders, which I take into account in the model (see below).

In the following, I introduce and assess two different evolutionary approaches as a background for the model of this article, one by David Sloan Wilson, and the other by Gerd Theissen. Wilson and other contemporary evolutionary theorists of religion seem to be totally unaware of Theissen's contribution although it was published already in 1984. The discussion of these two approaches, coming from two different branches of scholarship, sets the larger framework for the model that this article applies to the gospels of Mark and Matthew and their common source Q.

2.2. David Sloan Wilson's Darwin's Cathedral

As noted above, Wilson differs from evolutionary theorists and cognitive scientists like Richard Dawkins and Pascal Boyer, who take religion as a by-product, by arguing that religions survive because of their ability to enhance in-group morality and cohesion.

²⁷⁹ Petri Luomanen, "Rodney Starks tatsächliche Sozialwissenschaft (Real Social Science) im Lichte des sozial-mechanischen Zugangs (social mechanism approach)," in *Alte Texte in neuen Kontexten: Wo steht die sozialwissenschaftliche Biblelexegese?*, ed., R. E. DeMaris and W. Stegemann (Stuttgart: Kohlhammer, 2015), 265–284.

Since Wilson pictures groups as organisms that are adapted to their surroundings, he realizes that his application of evolutionary biology to social sciences “amounts to a revival of functionalism in social sciences.”²⁸⁰

The new methodological impact that Wilson claims to offer to social sciences can be summarized in three points: First, social sciences should learn from evolutionary biology the art of making distinctions between ultimate and proximate explanations. In Wilson’s approach, ultimate explanations refer to the survival and reproduction of the species. Since, from the viewpoint of biological evolution, history is ultimately steered by survival and reproduction, these are the most profound explanations. Wilson calls this the *prediction arm* of the adaptationist program.²⁸¹ Proximate explanations refer to the mechanisms that actually cause the behavior. Wilson calls these the *production arm* of the adaptationist program. Wilson emphasizes at several points that it is important to keep the ultimate and

²⁸⁰ Wilson, *Darwin’s Cathedral*, 48. Thus, Wilson has a double mission among social scientists. On the one hand, he seeks to show how his adaptationist evolutionary program would revolutionize the study of religion in social sciences. On the other hand, in order to convince his readers in the social sciences he also needs to prove that the bad reputation of functionalism within the social sciences is not totally justified and that functionalism, at least in the form that he applies it, is theoretically solid and empirically verifiable. Furthermore, group selection is the topic for which Wilson has argued among evolutionary biologists. Although he may have convinced some of his colleagues that group selection is something one has to take into account in addition to individual selection, many think that the effects of group level selection are relatively limited. Cf. Pascal Boyer, “Religion, Evolution, and Cognition,” *Current Anthropology* 45(3) (2004): 431–32; Samir Okasha, “Could Religion Be a Group-Level Adaptation of Homo sapiens?,” in *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 34(4) (2003): 700–1, 703–4; Michael Ruse, “Can Selection Explain the Presbyterians?” *Science* 297(5586) (2002): 1479.

²⁸¹ Wilson, *Darwin’s Cathedral*, 172–73.

proximate explanations apart. This is because reproduction and survival are the only hard facts that can be observed and of which we can say something with relative certainty.²⁸²

Second, it is important to focus on the appropriate level of analysis. Group selection can become visible only by focusing on the right adaptive unit.²⁸³ Third, Wilson thinks that evolutionary biology can offer a more sophisticated theory of psychology for the social sciences. In this regard, Wilson follows Cosmides and Tooby's research program.²⁸⁴

Do these points offer useful insights? Starting from the last claim, I agree here with Justin Barrett who finds the relation of the cognitive science of religion and evolutionary psychology more "opportunistic than necessary." Evolutionary psychology may sometimes contribute to the depth of cognitive explanations but it is not the most essential element.²⁸⁵ In the sphere of cultural evolution, this means that what matters are the cognitive properties of the mind—which were the same in the first century CE as they are now—that affect the transmission of cultural representations. It is of secondary importance how these properties have evolved.

As regards the second point, it is easy to agree with Wilson's demand to focus on the correct unit in order to see its adaptive functionality. However, from the perspective of early Christian studies, it must be noted that the idea of focusing on smaller adaptive units is not unknown in the study of early Christianity. Wilson also seems to have realized this

²⁸² Ibid., 68, 84, 172–77, 188.

²⁸³ Ibid., 177–82, 188.

²⁸⁴ Ibid., 84–85. Cf. Leda Cosmides and John Tooby, "Beyond Intuition and Instinct Blindness: Toward an Evolutionarily Rigorous Cognitive Science," *Cognition* 50(1-3) (1994): 41–77; Tooby and Cosmides, "Evolutionizing the Cognitive Sciences: A Reply to Shapiro and Epstein," *Mind & Language* 13(2): 195; idem., "Evolutionary Psychology, Ecological Rationality, and the Unification of the Behavioral Sciences," *Behavioral and Brain Sciences* 30 (01) (2007): 42–43.

²⁸⁵ See Justin L. Barrett, "Cognitive Science of Religion: What Is It and Why Is It?" *Religion Compass* 1(6) (2007): 779.

after having read Elaine Pagels' *The Origin of Satan* (1995).²⁸⁶ However, what strikes Wilson as “evolutionary” in Pagels’ book are observations and assumptions that are quite familiar to many scholars of early Christianity: different gospels and re-editions of gospels were produced for the needs of local communities. For Wilson, these are “adaptive responses to local pressures” that betray underlying evolutionary processes.²⁸⁷

It is no surprise that Wilson, who derives his inspiration from classics of sociology like Durkheim, sees something familiar here. Questions about the social setting of smaller units of gospel traditions were introduced into biblical studies through the form-critical method at the beginning of the 20th century. Form criticism, for its part, was partly inspired by the rise of the social sciences. Redaction criticism transposed the questions about the social setting of oral traditions to the level of entire gospels. Thus, in some sense, questions

²⁸⁶ Elaine Pagels, *The Origin of Satan* (London: Penguin Books, 1995).

²⁸⁷ See Wilson, *Darwin's Cathedral*, 213, 215, 218. As a matter of fact, Stanley Stowers has recently challenged the largely accepted assumption about gospels as products of local communities. See, Stanley Stowers, “The Concept of ‘Community’ and the History of Early Christianity,” *Method & Theory in the Study of Religion* 23 (3–4) (2011): 238–56. For Mark, see also Oda Wischmeyer, “Forming Identity Through Literature,” in *Mark and Matthew I. Comparative Readings: Understanding the Earliest Gospels in their First-Century Settings*, ed. E.-M. Becker and A. Runesson, *Wissenschaftliche Untersuchungen zum Neuen Testament*, 271 (Tübingen: Mohr Siebeck, 2011). In contrast to Richard Bauckham’s less convincing “Gospels for all nations” paradigm—which also challenges the classic notion about gospels as products for local communities—Stowers calls forth more accurate and perceptive analysis of the scribal culture and the variety of social formations that contributed to the spread of Christianity. Stowers regards the idea about a local community that is unified in belief and practice as a later Christian myth of origins that is based on the uncritical adoption of the picture propagated by Paul and Eusebius. Stowers’ point is well taken and his article clearly shows the need to revise much of the discussion about how texts and authors relate to assumed communities. Cf. Richard Bauckham, ed., *The Gospels For All Christians: Rethinking the Gospel Audiences* (Grand Rapids: Eerdmans, 1998).

connected to adaptationism have been on the agenda of biblical scholars for quite a long time.

As regards the first point—making a distinction between ultimate and proximate explanations—it is clear that the social-scientific study of the Bible and related literature and culture would surely benefit from a more profound understanding of the character of explanations that are applied within the discipline. Another question is how far the distinction between ultimate and proximate explanations can take us. The terms used in this distinction belong to the standard vocabulary of evolutionary biologists. However, there is no generally accepted definition for their content. Therefore, the use of these terms has often created considerable confusion within evolutionary biology and in discussions concerning cultural evolution. Instead of ultimate and proximate explanations, one should rather refer to evolutionary and non-evolutionary explanations.²⁸⁸

Despite these observations, it is clear that Wilson's book has its merits. As a matter of fact, Wilson's insistence on *mechanisms* comes close to the so-called "social mechanism approach" that emphasizes the role of middle-range theorizing and the need to explicate the causal mechanisms that are effective in social processes. However, in contrast to Wilson, this approach does not take the microlevel causal processes as less important than the evolutionary "ultimate" processes.²⁸⁹

Wilson's book also includes a very interesting section on altruism that is important for the present topic. Wilson argues that restricted altruism is an evolutionary adaptation

²⁸⁸ Petri Ylikoski and Tomi Kokkonen, *Evoluutio ja ihmisluento* (Helsinki: Gaudeamus, 2009), 329–38.

²⁸⁹ Peter Hedström, *Dissecting the Social: On the Principles of Analytical Sociology* (Cambridge: Cambridge University Press, 2005); Peter Hedström and Richard Swedberg, "Social Mechanisms: An Introductory Essay," in *Social Mechanisms: An Analytical Approach to Social Theory*, ed. P. Hedström and R. Swedberg, Studies in Rationality and Social Change, vol 11 (Cambridge: Cambridge University Press, 2005), 1–26. Peter Hedström and Lars Udehn. "Analytical Sociology and the Theories of Middle Range," in *The Oxford Handbook of Analytical Sociology*, ed. P. Hedström and P. Bearman (Oxford, Oxford University Press, 2009), 25–47.

that can be found “throughout the animal kingdom, at least in a rudimentary form.”²⁹⁰ However, although Wilson is, as a biologist, able to provide some interesting parallel examples from the life of guppies, the main thrust of the argument is derived from game theories developed by political scientists. Wilson bases his argument on the so-called “Tit-For-Tat-rule” (TFT-rule) that was presented by Anatoly Rapaport in a computer simulation tournament where the idea was to develop rules for altruistic and selfish behavior. Rapaport’s simple rule, according to which TFT remains altruistic with altruistic partners but turns selfish toward selfish partners, won the game even when the TFTs were destroyed in the selfish mode. Despite this, altruistic pairs take over the population in the long run. There are interesting variations of the simple TFT rule, and it is clear that this sort of theorizing may help us understand, for instance, the prevalence of both forgiveness and retaliation in biblical tradition.²⁹¹

Overall, although evolutionary biologists may still have to discuss the role of group selection in natural evolution at large, it seems clear to me that the idea of group selection in the area of evolution of the human species and cultural evolution is grounded well enough to provide a meaningful starting point for evolutionary accounts of culture and religion. Thus, I agree with Wilson about the significance of group selection in the research on the evolution of the human species and culture although I think that a more convincing and culture-sensitive case can be made on the basis of coevolution of nature and culture than by trying to show the significance of group selection in social sciences directly from biological evolution, as Wilson prefers to do.

2.3. Gerd Theissen’s *Biblical Faith*

²⁹⁰ Wilson, *Darwin’s Cathedral*, 189–94, esp. 194.

²⁹¹ For an introduction to game theories in the study of religion, see William Sims Bainbridge, *God from the Machine: Artificial Intelligence Models of Religious Cognition* (Lanham: Altamira Press, 2006).

Gerd Theissen's *Biblical Faith: An Evolutionary Approach* was published already in 1984 but it has remained relatively unknown even among scholars of early Christianity.²⁹² Despite its main title, *Biblical Faith*, which does not give a first impression of a liberal, science-oriented approach, the book is an ambitious attempt to explain and interpret biblical history and faith in the framework of Darwinian evolution.

Theissen's book has four main parts. In Part One, Theissen outlines the theory of evolution to be applied in the book, discussing the relation of scientific thought to faith as well as the relation of biological evolution to cultural evolution. The following parts deal with the three main articles of faith: Part Two analyzes faith in the one and only God, Part Three faith in Jesus of Nazareth and Part Four faith in the Holy Spirit.

Contradictions relativized

Part One begins with stating three fundamental contradictions between science and faith: (1) Hypothetical scientific thought versus apodictic faith. While science creates hypotheses to be tested and confuted, faith claims the value of absolute truth for its statements. (2) Scientific thought is subject to falsification; faith goes against the facts. (3) Scientific thought delights in dissention; faith is based on consensus.²⁹³ In Theissen's view, these contradictions are only apparent and they can be relativized in the light of evolutionary theory.

²⁹² The book develops further ideas that Theissen already presented in his Inaugural Lecture at the University of Heidelberg, October 29, 1980. Reprinted in Gerd Theissen, "Neutestamentliche Christologie und modernes Bewusstsein," in *Neutestamentliche Grenzgänge*, ed. P. Lampe and H. Schwier, *Novum Testamentum et Orbis Antiquus / Studien zur Umwelt des Neuen Testaments* 75 (Göttingen: Vandenhoeck & Ruprecht, 2010).

²⁹³ Gerd Theissen, *Biblical Faith: An Evolutionary Approach* (Minneapolis: Fortress, 2007 [1984]), 3–8.

First, hypothetical scientific thought and faith are not contradictory since both are ways of coping with an unknown reality. This point relies on the important epistemological premise of Theissen's approach: *evolutionary epistemology*:

Evolutionary epistemology regards the hypothesis of human knowledge as a continuation of that comprehensive process of adaptation of life to reality which governs all organic structures. Knowledge is the adaptation of cognitive structures to reality, the accommodation of thought to experience. Conversely: life forms knowledge.²⁹⁴

Second, science which is controlled with falsification, and faith which goes against the facts, are not contradictory in the last analysis because both are ways of coping with the pressure of selection. In Theissen's view, they "both accept the pressure of selection from reality and despite its harshness see it as a productive force." Science subjects its hypotheses to reality in order to better comply with it. It "affirms the falsification of its hypotheses." Faith goes against the facts in the sense that it "hopes in suffering, in crisis, in collapse, even against appearances. It is unconditional motivation to live."²⁹⁵ Theissen understands "going against the facts" in a restricted sense. It does not mean nonsensical opposition to the facts revealed by science but an attitude that looks beyond the harsh facts

²⁹⁴ Theissen, *Biblical Faith*, 19. Evolutionary epistemology forms the core of Theissen's approach. One of the theses Theissen develops on the basis of this epistemology concerns the possibility of experiencing resonance:

Evolution has made possible partially successful structures of adaptation which are given with life and which enable us to have *experiences of resonance* – experiences of harmony between subject and reality – in which we detect in reality something that corresponds to us.

"Existential experience of resonance" is important in Theissen's evolutionary thinking. It is experienced in a variety of areas of life: in nature, art, music, in interaction with other human beings.

²⁹⁵ *Ibid.*, 26–30.

and is motivated to live even if all the facts speak against the chances of survival. As we will see later, the idea of struggling against the forces of natural selection becomes crucial in Theissen's overall interpretation.

Third, the apparent contradiction between the science that delights in dissent and faith that depends on consensus is, in the last analysis, a matter of speed of change.

Science and faith are both open to mutations but both are also conservative—like nature itself. Natural evolution allows only an infinitesimal number of mutations, many of which do not survive, in order to sustain the adaptations that have already proved their functionality. Different areas of science progress at different speeds, and religion makes progress more slowly than science. Nevertheless, religion makes progress. In Theissen's view, "No one can rule out the possibility that there will be new revelatory figures in the future."²⁹⁶

Biological and cultural evolution

When discussing the relation of biological and cultural evolution, Theissen deals with the standard three main areas of evolutionary theory: variability, selection and preservation. Theissen's understanding of the relationship between biological and cultural evolution is largely compatible with the theory of coevolution of nature and culture as it is presented by Richerson and Boyd.²⁹⁷ Possibly this is because both are drawing on D. T. Campbell's ideas about the relation of cultural and biological evolution.²⁹⁸ In the present context, I will not go into the details of that discussion but will take up one point that is crucial for Theissen's understanding of the function of religion in evolution and, consequently, for his interpretation of the development of biblical religion. In Theissen's view,

²⁹⁶ Ibid., 30–41, esp. 35.

²⁹⁷ Richerson and Boyd, *Not by Genes Alone*.

²⁹⁸ Theissen, *Biblical Faith*, 9, 177 n. 7; Richerson and Boyd, *Not by Genes Alone*, 16–17.

Culture begins where human beings reduce the pressure of selection by intelligent behaviour, i.e. it also makes human life possible where it would have no chance of survival without its deliberate intervention. Culture is diminution of selection through change and differentiation in behaviour. At the same time, it creates new forms of pressure of selection: “hard” selection is replaced by “soft” selection.²⁹⁹

Furthermore,

The thesis of this book is that *if culture generally is a process which reduces selection, religion is the heart of human culture*. It is a rebellion against the principle of selection. It makes human beings open to a greater reality before which each individual has infinite value and is absolutely equal. Experiences with this reality are gathered together in exemplary form in the Bible.³⁰⁰

The Father and the Son and the Holy Spirit

Theissen’s central idea about culture and religion being forces that work against and soften, though not totally invalidate, the pressures of hard natural selection become clear in his description the birth of biblical monotheism. It is a standard view that during the Babylonian exile (586 BCE) and afterwards, when people were allowed to return to their homeland, Israel moved from the idea of worshipping only one god, namely its own god Yahweh, to the idea of there existing only one god. The crucial evolutionary twist lies in the fact that while the natural conclusion after being defeated should have been that Yahweh was weaker than the gods of the Babylonians, faith claimed that this is not the

²⁹⁹ Theissen, *Biblical Faith*, 13.

³⁰⁰ Ibid., 49. My emphasis.

case: Yahweh is the one and only God. The problem was with the nation that had not been faithful to his covenant and commands.³⁰¹

In Jesus' case, the twist is in his radical questioning of the "second principle of election, the power of selection." Jesus' proclamation and life—followed by the evolution of Christian faith—granted unconditional value to forms of life that would become extinct under the raw forces of natural selection: to the sick, the weak, the meek, strangers and slaves. This does not concern only natural selection but also the pressure of cultural selection: Jesus breaks the usual boundaries set up by family, other people, and the state.³⁰²

The force through which people can become incorporated into this ongoing struggle against the harshness of biological and cultural selection is the Spirit:

The Spirit aims at an inner transformation of humanity. Those seized by it are incorporated into the history of the protest against selection from the beginnings of Israel to Jesus of Nazareth; indeed, this history becomes their own history, and its struggles become their struggles.³⁰³

Theissen sees in the Pauline juxtaposition of "flesh" and "Spirit" the conflict of two phases of evolution: biological evolution and cultural evolution. In this conflict, the Spirit is on the side of cultural evolution although the Spirit is also always ready to fight against the oppressive laws of culture.

But a series of arguments suggests that the truth could be what liberal theologians love to deny, that we have a "natural" inclination to sin, in other words that we have pre-programmed tendencies of behaviour which are held in check by strong cultural control in the opposite direction and that when the

³⁰¹ Ibid., 51–81, esp. 67–72.

³⁰² Ibid., 114–15.

³⁰³ Ibid., 140.

cultural systems of restraints collapse they unleash a terrifying “proneness to degeneration among human beings.”³⁰⁴

Assessing Theissen’s evolutionary approach

When compared with Wilson’s approach, it is clear that Theissen’s evolutionary exposition is much more sophisticated in terms of the knowledge of the sources and in the application of the social science approach to early Christianity. However, although interesting, theoretically well-grounded, and appealing as an overall interpretation, Theissen’s work is highly abstract and leaves open many concrete questions of how adaptation and selection happened on the grassroots level. How were different Christian communities able to gain selective advance by softening the hard natural selection and in competition with other contemporary cultural and religious forms of life? How are the large scale processes and quite abstract principles of faith that in Theissen’s view characterize early Christianity as a whole related to concrete documents and their contribution to the development of early Christianity? Wilson’s question about the level of analysis and about the units that were selected in practice, is crucial here.

Theissen’s interpretation of Jesus’ message and role in challenging the natural selection process also raises the question about the so-called “free riders,” people who might take advantage of uncompromised altruism, causing net costs to Christian communities by using their resources without any return and thus making early Christians more susceptible to the hard forces of natural selection. As noted above, game theory suggests that altruism can be successful only in a restricted form because restricted altruism has better chances of survival than unconditional altruism. Theissen touches on this problem when he deals with ecclesiology and solidarity within Christian churches,³⁰⁵ but the discussion is not explicitly connected to evolutionary discussion about altruism and group selection.

³⁰⁴ Ibid., 146–7.

³⁰⁵ Ibid., 158–63.

3. Towards a model for the evolutionary analysis of early Christian gospels

3.1. Open networks and identity markers

One of the previously neglected topics that Stark has brought into focus is the question about the type of networks through which Christianity was able to spread. In Stark's view, it was essential for Christianity that it remained an open network which was able to reach out to new members and integrate them.³⁰⁶

I fully agree that without open networks Christianity would not have spread the way it did. However, I also think that W. D. Runciman has a point when he emphasizes that the success of Christianity in cultural evolution was based on the combination of unconditional benevolence towards outsiders (which Stark sees as a sign of the openness of Christian networks) and strong reciprocity within the community. Open networks are necessary for effective spreading of a movement but they are not enough to hold local communities together. A movement that spreads through open networks would soon fall apart unless it is able to form stable, more closely knit local communities. Runciman's main point is that unconditional altruism needs to be balanced with reciprocity if the movement wishes to avoid being exploited by free riders. As was noted above, this is a question that Theissen's analysis leaves open. Therefore, I think that an analysis of the evolution of religious movements also needs to pay attention to community control mechanisms through which the movement is able to defend itself against exploitation.

Another important factor that supports the survival of religious movements is identity construction and maintenance. István Czachesz, for instance, has singled out symbolic identity markers as one of the factors that affected the spread of Christianity.³⁰⁷ However,

³⁰⁶ Rodney Stark, *The Rise of Christianity*, 73–94, 95–128.

³⁰⁷ István Czachesz, "Theologische Innovation und Sozialstruktur im Urchristentum: Eine kognitive Analyse seiner Ausbreitungsdynamik," *Evangelische Theologie* 71(4) (2011): 259–72. Czachesz suggests a model for the analysis of the spread of religious movements

Czachesz's symbolic identity markers address the question of identity maintenance only on a very general level. Czachesz takes his cue from Peter Richerson and Robert Boyd who argue that early hunter-gatherers actually formed larger clans earlier than has been previously assumed (around 100,000 year ago, at the latest, instead of the beginning of agriculture ca. 11,500 ago) and this happened with the help of symbols which the clans used as their identity markers.³⁰⁸

I agree that this is an important factor and absolutely essential to take into account. However, it seems that symbolic identity markers as they are defined by Czachesz are more important on a "clan" level where they may provide the main means of identity recognition, while on the local level other social-psychological factors also play their role.³⁰⁹ In the perspective of the social identity approach, these local factors can be analyzed with the help of such concepts as *exemplars* of group members, *cultural and cognitive prototypes* and *outgroup stereotypes*.³¹⁰ They provide important means of identity construction and recognition in everyday life.

that distinguishes three factors: (1) memorability of religious representations, (2) the structure of social networks and (3) symbolic identity markers. For a more detailed discussion of Czachesz's model, see Petri Luomanen, "From Mark and Q to Matthew: An Experiment in Evolutionary Analysis," in *Mark and Matthew II*, ed. E.-M. Becker and A. Runesson. Wissenschaftliche Untersuchungen zum Neuen Testament 304 (Tübingen: Mohr Siebeck, 2013), 37–73.

³⁰⁸ Richerson and Boyd, *Not by Genes Alone*, 211–16, 224–29.

³⁰⁹ Richerson and Boyd are not very clear on their own use of the term "symbolic marker" but they seem to use it in a slightly broader sense than Czachesz. In this context, they also refer to the research of Henry Tajfel, the founder of social identity theory. See Richerson and Boyd, *Not by Genes Alone*, 221–22. Thus, my elaboration of the analysis of symbolic markers with the concepts of the social identity approach does not contradict but supplements Richerson and Boyd's (and Czachesz's) analytical perspective.

³¹⁰ *Exemplars* refer to concrete examples of group members, either historical or present. *Prototypes* and *prototypicality* are usually defined within the social identity approach as an abstract, intuitively calculated picture of the ideal group members. In order to enhance the

3.2. Towards a more comprehensive model

Although the creation and editing of gospels can be seen—to use David Sloan Wilson’s characterization—as “adaptive responses to local pressures,” the future success of these texts in cultural evolution depends on their more general ability to become widespread by also appearing attractive and relevant to other groups.³¹¹

application of the social identity approach to historical material, I have suggested a distinction between *cultural prototypes* and *cognitive prototypes*. Cultural prototypes are culturally generated and transmitted pictures of ideal members while cognitive prototypes are stored only in the minds of individual group members. For a more detailed discussion, see Petri Luomanen “Cognitive Science in Biblical Studies: An Overview,” in *Collegium Biblicum Årsskrift 2011: Kognitionsforskning og eksegesi*, ed. K. Jeppsen and K. B. Larsen (Copenhagen, Collegium Biblicum, selskab for danske eksegeter), 7–13. This distinction slightly modifies my earlier suggestion in Petri Luomanen, “The Sociology of Knowledge, the Social Identity Approach and the Cognitive Study of Religion,” in *Explaining Christian Origins and Early Judaism: Contributions from Cognitive and Social Science*, ed. P. Luomanen, Ilkka Pyysiäinen and Risto Uro. Biblical Interpretation Series 89 (Leiden: E. J. Brill, 2007), 210–24.

³¹¹ Keeping in mind Stowers’ perceptive warnings not to picture authors as writing only for the needs of their local communities (see above) it is to be noted that I am not claiming that the features that support identity formation unmistakably reflect the concerns of the authors’ local community. The point is that, whatever the reason why the features are in the text, it is possible to assess their contribution to the formation and maintenance of social identities among the recipients of the gospel narratives. This approach coheres with the way in which Stowers sees Paul’s relation to his “communities”: rather than reflecting an existing reality, Paul may have acted like an entrepreneur who envisioned and called into being certain types of social formations, more or less successfully. Cf. Stowers, “The Concept of ‘Community’ and the History of Early Christianity,” 242.

The following model seeks to list some central characteristics that are required of a text in order to become widespread *in an emerging religious movement that is forming its distinctive social identity*. It is to be noted that the model does not try to explain the success of religious texts in general. It is easy to find texts that do not meet the criteria of the following model, but which, nevertheless, have been successfully spreading in religious traditions. The focus of the model is on the texts that support the formation and maintenance of new social identities, “mutations” in the development of religious communities.

On the basis of the above considerations and drawing on the discussions on social memory and cognitive approaches to ritual,³¹² I have divided the analytical perspectives to be applied into four categories:

1) *Formal characteristics of the discourse*: attractiveness (which causes the story to be retold) with closely related memorability, relevance (relevant mysteries),³¹³ credence and historical perspective.

2) *Network discourse and community control*: norms enhancing group solidarity, ability to deal with the free rider problem, open/closed networks and weak/strong links.

3) *Identity discourse*: Social identity perspective (exemplars, cultural and cognitive prototypes, stereotypes), identity building function of social memories and symbolic identity markers.

³¹² Luomanen, “Cognitive Science in Biblical Studies”; Petri Luomanen, “How Religions Remember: Memory Theories in Biblical Studies and the Cognitive Study of Religion,” in *Mind, Morality and Magic: Cognitive Science Approaches in Biblical Studies*, ed. I. Czachesz and Risto Uro (Durham: Acumen, 2013), 24–42.

³¹³ Dan Sperber, *Explaining Culture: A Naturalistic Approach* (Oxford: Blackwell, 1996), 70–74. Because Sperber’s concept of relevant mystery is more formal in character than his ideas about relevance in general, I am dealing with relevant mysteries in this formal category. Overall relevance is more closely related to the social and historical setting on the basis of which people find some representation more usable than others. Therefore, I deal with this socially constructed relevance in connection with the identity discourse.

4) *Ritual discourse*: number of rituals, their symbolic function, their identity-building function, attractiveness (emotional arousal, immediacy of superhuman agents) and support for transmission of religious traditions.

The three listed discourses, supplemented with the formal analysis of the discourse as a whole, are partly overlapping. For instance, it is clear that identity is affected not only by the topics that are listed under identity discourse but also through cultic activities, community control and historical perspective of the narrative. Furthermore, the themes listed under each discourse are only examples of the most central topics to be kept in mind.

4. Example: Comparing Mark, Matthew and Q

In another context I have conducted a more detailed comparison of Matthew's and Mark's gospels and the sayings gospel Q in the framework of the above model.³¹⁴ Space does not allow the presentation of the detailed analysis here but the results can be summarized as follows.

4.1. Why did Mark survive but Q did not?

As noted above, the comparison of Matthew, Mark and Q provides an interesting opportunity to test the model developed above because it is possible to regard Q as a document that was not selected as such in the cultural evolution of early Christianity. The comparison of Q with the Gospel of Matthew is also highly relevant for the discussion of the development of Christian morality because Matthew's Sermon on the Mount—often regarded as the crystallization of Jesus' teachings and Christian morality—was in its incipient form already in Q.

³¹⁴ Luomanen, "From Mark and Q to Matthew."

Thus far, scholars have not been able to find satisfactory explanations for the fact that even though Matthew and Luke prepared new and more complete editions of both Q and Mark, only Mark has survived as a separate document. Often the result has been considered largely as one of the coincidences of history. The results of the comparison in the framework of the above model challenges this popular assumption by revealing clear correspondences among several socio-cognitive factors contributing to the potential survival of documents and the factual distribution of the Gospel of Mark, the Gospel of Matthew and Q during the first centuries CE. Of these three documents, Matthew was most popular, Mark almost fell into oblivion, and Q disappeared.

4.2. Applying the model

Judged on the basis of *formal characteristics*, Mark's and Matthew's narrative form, which, nonetheless, includes short episodes, has a selective advantage over Q's wisdom discourse. Mark's and Matthew's episodes include more counterintuitive elements, which enhances memorability. Episodes with their more vivid imagery also make better use of memory resources by creating representations that are coded by several cognitive systems. Q's wisdom discourse is restricted more (but not solely) to semantic memory. Mark's—and even more so Matthew's—narrative also sketches a clearer template for a historical anchoring of social identity by linking Jesus' history explicitly with Israel's sacred past. Q also presupposes Israel's past and interprets the present in the light of the Deuteronomistic scheme of God's prophets calling people to repentance—and being rejected, but that is more implicit than explicit. Although Matthew's narrative is more complete than Mark's, which gives it some selective advantage, Mark also has its own unique character as a narrative of relevant mysteries: the so-called Messianic secret, the disciples' incomprehension, and the abrupt ending all entice memory searches and call for explanations.

In terms of *network discourse*, Matthew's narrative is the most open of the three: the mission command at the end of the Gospel (Matt 28:16–20) reaches out programmatically and the Sermon on the Mount sets out the principles of unconditional benevolence—in a

form that has showed its attractive force throughout centuries. Matthew has accentuated the benevolence that is already present in Q's sermon. Q's benevolence is not totally without community control that counteracts free riding but Q's control mechanisms are modest in comparison with Matthew's highly developed community rule that gives detailed rules for the expulsion of community members (Matthew 18). Matthew also emphasizes brotherly love more than Q, and that supports the formation of strong links within the community. There are also signs of openness and control in Mark's narrative but they do not constitute such a central topic in Mark as they do in Matthew and Q. Mark's narrative focuses on unfolding the mystery of the suffering Messiah, not on transmitting his teaching of unconditional benevolence or providing instructions on how to regulate life in the post-resurrection congregation.

The narrative form of Mark and Matthew also show their selective advantage in the *identity discourse*. The story about Jesus and his followers offers many more means of identity construction than Jesus' proclamation and teaching of ethical maxims in Q. The characters in the narratives of Mark and Matthew function as cultural examples and prototypes that serve identity formation. The narratives also make it possible to bind identity with history. Matthew's narrative includes many signs of more developed stereotyping and typification of characters and their actions.³¹⁵ The way in which Matthew has reedited Mark's narrative shows that there was a clear intention to make the story about Jesus and his followers transparent to the situation of its later hearers/readers. This kind of transparency is largely missing in Q. Confessing Jesus and the readiness to follow him into suffering appear as symbolic identity markers in all three documents. In Q, poverty and self-denial may also have functioned as identity markers. Matthew's narrative, for its part, clearly emphasizes baptism as an identity marker. Thus, although all three include means of signaling identity, only Mark and Matthew provide a variety of means of identity construction, and Matthew even more than Mark.

³¹⁵ See Petri Luomanen, "Matthew's Corpus Mixtum in the Perspective of the Social Identity Approach," in *Voces Calamantium in Deserto: Essays in Honor of Kari Syreeni*, ed., S.-O. Back and M. Kankaanniemi. Studier i exegetik och judaistik utgivna av Teologiska fakulteten vid Åbo Akademi 11 (Åbo: Åbo Akademi, 2012), 199–215.

Ritual discourse is also more developed in Matthew than in Mark and Q. In addition to institutionalizing baptism at the end of the Gospel, Matthew has also tuned up the ability of rituals to signal identity to best serve openness towards outsiders and the consolidation of identity within the in-group. This is achieved by emphasizing good works as the number one outward signal of identity and restricting ritual behavior and its identity signaling function to private and in-group settings (Matt 6:1–18). Furthermore, to the extent that identity is signaled, it is not for self-enhancement but for the honor of the Heavenly Father (Matt 5:13–16). Matthew also explicitly connects the transmission of Jesus’s teachings to baptism which must have been an event that was coded deep in autobiographical memory, enhancing memory retrieval of (at least some) of the teachings. On the other hand, the words of the institution of the Eucharist—both in Mark and in Matthew—hark back to the foundational history of the new movement. Although the Eucharist, if celebrated in the context of ordinary meals, may not have caused much emotional arousal, the repetition of the words in exactly the same form kept the memory of the beginnings alive. Although the Q community may have had its own form of communal/Eucharistic meal, it significantly weakened Q’s selective appeal that the text did not include any references to it.

All in all, this evolutionary analysis in terms of the above four discourses shows that of these three documents, Q was the most likely to disappear as an independent document and Matthew the most likely to be the most successful. It is important to note, however, that Matthew’s successful evolutionary profile would not have been possible without Q. It is the combination of Q’s unrestricted benevolence, the transparent potential of Mark’s narrative, and the highly developed communal control and institutionalization from Matthew’s special tradition that created the successful evolutionary profile of Matthew’s narrative.

The essential difference between Mark and Q is that, although Mark does not include quite as many elements as Matthew that support identity and transmission of tradition, Mark nevertheless scores decently in all discourses. These results partly confirm Harvey Whitehouse’s assumption according to which, in the long run, religions have to—if they are to maintain their distinctive character—solve the problem of how to transmit

cognitively costly traditions.³¹⁶ Notably the content of this costly tradition in Q closely approximates the counter-evolutionary message of Jesus, a “mutation” which, in Theissen’s evolutionary interpretation, challenges the hard forces of natural selection.³¹⁷ Obviously, Q as a document does not belong to the category of “religion is easy and natural.”³¹⁸ It rather sets high ethical standards and requires repentance. However, when combined with the transparent story of Jesus that Mark originally sketched, Q’s teachings received a more attractive frame that ensured the survival of its essential legacy for later generations.

5. Conclusion

Thus far, the evolutionary analyses of the rise of Christianity have been either highly abstract (Theissen, the methodological part of Wilson’s analysis) or relied heavily on Rodney Stark’s account of the reasons why Christianity spread in the Roman Empire.

In the present chapter, I have introduced a model that aims at a more detailed account of the mechanisms that affected the survival of early Christian gospels as foundational documents of an emerging religious movement. The model is essentially based on the assumptions that the spread of a religious movement requires or is supported by open networks and unrestricted benevolence. However, the long-term survival requires a repertoire of identity-building and supporting systems as well as norms that protect the community from free riders. Consequently, the more a text provides these elements the better chances of survival it has as the literature of an emerging religious movement.

The comparison of Q, Mark, and Matthew reveals many differences in the four discourses examined (formal, network, identity, ritual), many of which seem to have contributed to the better survival of Mark and Matthew. One of these differences deserves

³¹⁶ Cf. Harvey Whitehouse, *Modes of Religiosity: A Cognitive Theory of Religious Transmission* (Walnut Creek, CA: AltaMira, 2004), 49–59.

³¹⁷ Cf. Theissen, *Biblical Faith*, 105–28.

³¹⁸ Whitehouse, *Modes of Religiosity*, 76.

special notice because empirical research also seems to confirm its significance for moral behavior: a text's potential for identity building and maintenance. Kristen Renwick Monroe's contribution in this volume argues interestingly that identity is more important than doctrine or norms as the source of altruistic behavior. Thus, if Rodney Stark is right that Christian benevolence contributed significantly to the success of Christianity, the central mechanism through which this behavior was enticed was perhaps not so much the doctrine of love for one's neighbor (which itself is not a novelty in Christianity) as the fact that Christian communities had a variety of means to support new identities that showed benevolence towards outsiders.

On the other hand, if the results of comparison—the development from Q to Mark and Matthew—is viewed in the framework of Theissen's theory, it seems that Jesus' unconditional protest against selection, his uncompromising universalism and solidarity with the weak, becomes partly compromised. Does this mean that, in order to survive, the Christian gospel tradition had, after all, to adapt to similar harsh principles of selection as those that govern biological evolution? Is that an inevitable direction of development in a world that is framed by the principles of coevolution of nature and culture? Or is that something that could and should be counteracted?

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